

ADDITIONAL NOTES ON THE GENUS LIPPIA. IV

Harold N. Moldenke

LIPPIA ABYSSINICA var. PUBESCENS (Moldenke) Moldenke

Additional bibliography: Moldenke, *Phytologia* 38: 266. 1978.

Sutherland refers to this variety as "common shrubs, 1—2 m. tall, on mountainsides with low shrubs and herbs, frequent in pastures, leaves strongly aromatic". He encountered it at 2700 m. altitude, flowering and fruiting in April and June. The corollas on his no. 132 were "light-violet with yellow throats", on 340 "white with green centers", and on 380 "light-purple with yellow center".

Additional citations: ETHIOPIA: Sutherland 132 (Ws), 340 (Ws), 380 (Ws).

LIPPIA ACUMINATA C. Wright

Synonymy: Lippia acuminata "C. Wright ex Griseb." apud Hocking, *Excerpt. Bot. A.10*: 271. 1966.

Additional bibliography: Moldenke, *Phytologia* 12: 44. 1965; Hocking, *Excerpt. Bot. A.10*: 271. 1966; Moldenke, *Fifth Summ.* 1: 97 (1971) and 2: 549 & 889. 1971; León & Alain, *Fl. Cuba, imp.* 2, 2: 280 & 288—293. 1974.

LIPPIA ACUTIDENS Mart. & Schau.

Synonymy: Lippia acutidens "Mart. & Schau. ex Schau." apud Hocking, *Excerpt. Bot. A.10*: 271. 1966.

Bibliography: Buek, *Gen. Spec. Syn. Candoll.* 3: 265. 1958; Hocking, *Excerpt. Bot. A.10*: 271. 1966; Moldenke, *Phytologia* 13: 344—345. 1966; Moldenke, *Fifth Summ.* 1: 155 (1971) and 2: 549 & 889. 1971; Moldenke, *Phytologia* 34: 258. 1976.

The Gottsbergers encountered this plant in "campo cerrado (e um campo com elementos arbóreos de cerrado esparcos)" and speak of the flowers [corollas] as white with "no interior amarelo ou lilás, muitas vezes as pétalas com manchas lilásas", flowering in July. Hatschbach found it on sandy "campo cerrado", flowering in October, and describes it as a subshrub, 1 m. tall, the corollas rose-colored.

Additional & emended citations: BRAZIL: Bahia: Gottsberger & Gottsberger 12-24771 (Z); Hatschbach 39037 (Ld). Goiás: Hatschbach 39041 (Ld). Minas Gerais: Martius 1734 [Macbride photos 20319] (Kr—photo of type, Mu—1-type, N—photo of type, W—photo of type).

LIPPIA ADPRESSA Hayek

Bibliography: Moldenke, *Phytologia* 12: 45—46. 1965; Hocking, *Excerpt. Bot. A.10*: 271. 1966; Moldenke, *Fifth Summ.* 1: 155 (1971) and 2: 889. 1971.

Hatschbach & Kummrow encountered this plant on "campo rocho-

so", flowering in September, and describe the corollas as "lilac".

Additional citations: BRAZIL: Goiás: Hatschbach & Kummrow 37266 (Ld).

LIPPIA AFFINIS Schau.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 265. 1858; R. C. Foster, Contrib. Gray Herb. 184: 170. 1958; Hocking, Excerpt. Bot. A.10: 271. 1966; Moldenke, Phytologia 13: 345. 1966; Tamayo, Bol. Soc. Venez. Cienc. Nat. 27: 165. 1967; Angely, Fl. Anal. & Fitogeogr. S. Paulo, ed. 1, 4: xi & 834. 1971; Moldenke, Fifth Summ. 1: 155 & 183 (1971) and 2: 889. 1971; Altschul, Drugs & Foods 24h. 1973; Moldenke, Phytologia 25: 229 (1973) and 28: 439. 1974; Troncoso, Darwiniana 18: 337 & 410. 1974.

Recent collectors describe this plant as an erect subshrub, 75 cm. to 1 m. tall, and have encountered it among rocks on rocky slopes and also on campo cerrado, at altitudes of 1000--1050 m., flowering in January and April. The corollas are said to have been "white" on Irwin, Anderson, Stieber, & Lee 34220 and "pale pinkish-white" on Philcox & Onishi 4772. Altschul (1973) reports that parts of the plant are made into a tea and used in treating dysentery, on the basis of statements on Mexia 5625. Tamayo (1967) reports this species as a subdominant in the shrub stratum in a xerophilous very spiny climax woods from Guapira to Paria in Venezuela, but in all probability he is here actually referring to L. organoides H.B.K.

The Angely (1971) reference in the bibliography of L. affinis is sometimes cited as "1970", the title-page date, but it was not actually published until 1971. The Sampaio 6829 [Herb. Jard. Bot. Belo Horiz. 12307], distributed as L. affinis and so cited by me in my 1965 work, actually is L. stachyoides Cham.

Additional citations: BRAZIL: Distrito Federal: Philcox & Onishi 4772 (N). Goiás: Hatschbach, Anderson, Barneby, & Gates 36267 (Ld, N); Irwin, Anderson, Stieber, & Lee 34220 (N, W--2709294, Z). Minas Gerais: Mexia 5624 (Au--121153).

LIPPIA ALBA (Mill.) N. E. Br.

Additional & emended synonymy: Lantana alba Mill., Gard. Dict., ed. 8, Lantana no. 8. 1768. Verbena odorata Hort. Paris. ex Pers., Syn. Pl. 2: 140, in syn. 1806. Lippia geminata H.B.K., Nov. Gen. & Sp. Pl., ed. folio, 2: 214 & 215. 1817 [not L. geminata Millsp., 1930, nor Schl., 1964]. Verbena odorata (Pers.) Steud., Nom. Bot. Phan., ed. 1, 873 & 898. 1821 [not V. odorata Desf., 1841, nor Meyen, 1834, nor Meyer, 1946]. Lantana sp. n. 5 Hook. f. & Thomson ex C. B. Clarke in Hook. f., Fl. Brit. India 4: 564, in syn. 1885. Lantana canescens Hort. ex C. B. Clarke in Hook. f., Fl. Brit. India 4: 564, in syn. 1885 [not L. canescens Benth., 1959, nor Fedde, 1932, nor H.B.K., 1817, nor Kunth, 1825, nor L., 1885]. Verbena odorata Pers. apud Jacks. in Hook. f. & Jacks., Ind. Kew., Imp. 1, 2: 95, in syn. 1894. Lippia

geminata Kunth apud Goyena, Fl. Nicarag. 1: 560. 1911. Lippia geminata microphylla Griseb. ex Fedde & Schust. in Just, Bot. Jahresber. 58 (2): 329, in syn. 1938. Lippia alba "(Mill.) N. E. Br. ex Britton & Wilson" apud Santapau & Wagh, Bull. Bot. Surv. India 5: 107. 1963. Lantana cuneatifolia Klotzsch ex Moldenke, Résumé Suppl. 10: 5, in syn. 1964. Lippia alba "(Mill.) N. E. Br. ex Britton & Wilson" apud Malick, Bull. Bot. Surv. India 8: 55, sphalm. 1966. Lippia alba (N. E. Br.) Morton, Econ. Bot. 22: 97, sphalm. 1968. Lippia asperifolia Amico, Erbar. Trop. Firenz. Publ. 11: 34. 1968. Lippia alba (Mill.) Brawn ex Moldenke, Fifth Summ. 2: 550, in syn. 1971. Lippia alba (Mill.) N. E. Briq. ex Moldenke, Phytologia 23: 432, in syn. 1972. Lantana alba (Mill.) N. E. Br., in herb. [not L. alba Brandis, 1906, nor L., 1947, nor Link, 1947, nor Mill. & Benth., 1968, nor Mill. ex Link, 1967, nor Schau., 1885, nor Vent., 1971].

Additional & emended bibliography: Mill., Gard. Dict., ed. 8, Lantana no. 8. 1768; L'Hér., Observ. Phys. Hist. Nat. & Art. 33: 53--56. 1788; Raeusch., Nom. Bot., ed. 3, 3. 1797; H.B.K., Nov. Gen. & Sp. Pl., ed. folio, 2: 214--215 (1817) and ed. quarto, 2: 265--266. 1818; Pers., Sp. Pl. 3: 351. 1819; Otto & Dietr., Allg. Gartenzeit. 10: 315. 1842; Sweet, Hort. Brit., ed. 1, 1: 324 (1826), ed. 2, 418 (1830), and ed. 3, 552. 1839; Schau. in A. DC., Prodr. 11: 556, 582--583, 606, & 608. 1847; Buek, Gen. Spec. Syn. Candol. 3: 252, 253, 265, 495, & 507. 1858; Thwaites & Hook. f., Enum. Pl. Zeyl., imp. 1, 242. 1861; Aitch., Journ. Linn. Soc. Lond. Bot. 8: 70. 1865; Gilbert, Enum. Pl. Montev. 44. 1873; Gamble, Man. Indian Timb., ed. 1, 282 & 511. 1881; Hieron., Bol. Acad. Nac. Cienc. Córdoba 4: [Sert. Sanjuan.] 406. 1881; G. Peckolt, Revist. Pharmaceut. Rio Jan. 1884: 184. 1884; C. B. Clarke in Hook. f., Fl. Brit. India 4: 563--564. 1885; Trimen, Journ. Ceyl. Br. Roy. Asiat. Soc. 9: [Syst. Cat. Flow. Pl. Ceyl.] 68. 1885; Nairne, Flow. Pl. West. India 245. 1894; J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 277 & 280. 1900; Barnhart, Bull. Torrey Bot. Club 29: 590. 1902; Prain, Bengal Pl., imp. 1, 825. 1903; T. Peckolt, Bericht. Deutsch. Pharm. Gesell. 14: 470. 1904; Brandis, Indian Trees, imp. 1, 503. 1906; Reiche & Phil., Fl. Chil. 5: 298 & 301--302. 1910; Goyena, Fl. Nicarag. 1: 559--560 & 563. 1911; Loes., Verh. Bot. Ver. Brand. 53: 75. 1912; A. Chev., Cat. Pl. Jard. Bot. Saigon 35. 1919; Baez, Anal. Asoc. Estud. Mus. Pop. Paraná 1920: 40. 1920; Haines, Bot. Bihar & Orissa 4: 706. 1922; Buscalioni & Roccella, Malpighia 29: 393--409. 1923; Wangerin in Just, Bot. Jahresber. 51 (1): 554. 1923; Gamble, Fl. Presid. Madras 6: 1088--1089. 1924; Pittier, Man. Pl. Usuel. Venez. 169 & 435. 1926; Kräusel in Just, Bot. Jahresber. 50 (1): 571 & 608. 1932; Fedde in Just, Bot. Jahresber. 51 (2): 316. 1933; M. Martinez, Pl. Medic. Mex., ed. 1, 451 & 621. 1933; Anon., Ind. Sem. Ofr. Canje Jard. Bot. Montev. 5. 1935; Baez, Mus. Entre Rios cart. Herb. Paran. 44. 1938; Fedde & Schust. in Just, Bot. Jahresber. 58 (2): 329. 1938; Kanjilal, Das, Kanjilal, & De,

Fl. Assam 3: 461 & 552. 1939; M. Martinez, Pl. Medic. Mex., ed. 2, 451 & 608. 1939; Cummins, Lloydia 3: 16. 1940; Biswas, Indian Forest Rec., ser. 2, Bot. 3: 42. 1941; Meeuse, Blumea 5: 68. 1942; Cabrera, Man. Fl. Alred. Buenos Aires 393. 1953; Rambo, Sellowia 6: 60, 84, & 153. 1954; Fester, Martinuzzi, Retamar, & Ricciardi, Rev. Fac. Ing. Quim. 24: 37. 1955; Vélez, Herb. Angiosp. Lesser Ant. 117. 1957; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14367 & 14358. 1958; R. C. Foster, Contrib. Gray Herb. 184: 170. 1958; Karrer, Konstit. & Vork. Organ. Pflanzenst. 22 & 175. 1958; M. Martinez, Pl. Medic. Mex., ed. 4. 1959; Rose & Choudhury, Bull. Bot. Soc. Bengal 14: 71—72. 1960; Braga, Pl. Nordest., ed. 2, 186. 1960; Costa, Cardoso do Vale, & Maia e Vale, Bol. Esc. Farmac. Univ. Coimbra 19/20: 277—297. 1960; J. F. Macbr., Field Mus. Publ. Bot. 13 (5): 645—647. 1960; Vines, Trees Shrubs & Woody Vines. 1960; Fester, Martinuzzi, Retamar, Ricciardi, Romero Fonseca, & Cassano, Revist. Fac. Cienc. Agrar. Mendoza 8 (2): [45], 47, & 49. 1961; Fester, Martinuzzi, Retamar, & Ricciardi, Rev. Fac. Ing. Quim. 30: 5 & 11. 1961; Kariyone, Ann. Ind. Repl. Pl. Chem. 1959: 94. 1962; Sastri, Wealth India 6: 141—142. 1962; Prain, Bengal Fl., ed. 2, 2: 616 & 994. 1963; Cave, Ind. Pl. Chromos. Numb. 2: 330 & 361. 1964; Hocking, Excerpt. Bot. A.7: 213. 1964; Martínez-Croveto, Bonplandia 1: 291 & 317. 1964; Srivastava, Journ. Indian Bot. Soc. 43: 106. 1964; Thwaites & Hook. f., Enum. Pl. Zeyl., imp. 2, 242. 1964; Angely, Fl. Anal. Paran., ed. 1, 575. 1965; Anon., Hortic. Abstr. 35: 444. 1965; Datta, Handb. Syst. Bot. 183. 1965; Kariyone, Ann. Ind. Rep. Pl. Chem. 1961: 130. 1965; Majumdar, Bull. Bot. Soc. Beng. 19: 14. 1965; Martínez-Croveto, Bonplandia 2: 5, 20, & 23. 1965; Moldenke, Biol. Abstr. 46: 7723. 1965; Teague, Anal. Mus. Hist. Nat. Montev., ser. 2, 7 (4): 45. 1965; Troncoso in Cabrera, Fl. Prov. Buenos Aires 5: 145—147, fig. 49. 1965; R. H. Compton, Journ. S. Afr. Bot. Suppl. 6: 65, 156, 176, & 179. 1966; Datta & Majumdar, Bull. Bot. Soc. Bengal 20: 102. 1966; Griffith & Hyland, U. S. Dept. Agr. Pl. Invent. 167: 308. 1966; Hocking, Excerpt. Bot. A.10: 271. 1966; Malick, Bull. Bot. Surv. India 8: 55. 1966; Panigrahi, Bull. Bot. Surv. India 8: 3, 4, & 11. 1966; Raizada, Indian Forest. 92: 316. 1966; Rao & Rabha, Bull. Bot. Surv. India 8: 301. 1966; Subramanyam & Henry, Bull. Bot. Surv. India 8: 212. 1966; Thathathri, Shetty, & Hazra, Bull. Bot. Surv. India 8: 138. 1966; Moldenke, Phytologia 14: 403—404. 1967; Moldenke, Résumé Suppl. 15: 5, 9, 15, & 21 (1967) and 16: 6, 9, 13, & 23. 1968; Amico, Erbar. Trop. Firenz. Publ. 11: 18, 24, 28, 30, & 34. 1968; Badhwar & Fernandez, Edible Wild Pl. Himal. 285. 1968; S. P. & R. N. Banerjee, Bull. Bot. Surv. India 10: 187. 1968; Burlage, Ind. Pl. Tex. 183, 199, 207, 230, 237, & 242. 1968; Kundu & De, Bull. Bot. Surv. India 10: 398. 1968; Maiti, Bull. Bot. Surv. India 10: 121. 1968; Moldenke, Résumé Suppl. 17: 2. 1968; J. F. Morton, Econ. Bot. 22: 97. 1968; Uphof, Dict. Econ. Pl., ed. 2, 315. 1968; S. P. & R. N. Banerjee, Bull. Bot. Soc. Bengal 23: 170. 1969; Bolkh., Grif, Matvej., & Zakhar., Chrom. Numb. Flow. Pl., imp. 1, 716. 1969; Farnsworth, Blomster, Quimby, & Schermerh., Lynn Index 6: 265 &

267. 1969; M. Martinez, Pl. Med. Mex., ed. 5, 464 & 489. 1969; Raju, Bull. Bot. Soc. Bengal 23: [69]—70. 1969; Rao & Verma, Bull. Bot. Surv. India 11: 410. 1969; M. A. Rau, Bull. Bot. Surv. India 10, Suppl. 2: 62. 1969; Rickett, Wild Fls. U. S. 3 (2): 366. 1969; G. W. Thomas, Tex. Pl. Ecolog. Summ. 77. 1969; Bonzani da Silva, Rev. Farm. Bioquim. Univ. São Paulo 8 (2): 183—186. 1970; Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1799, 1814, 1834, 1841, 1849, 1865, 1873, & 1874. 1970; El-Gazzar & Wats., New Phytol. 69: 483 & 485. 1970; Farnsworth, Pharmacog. Titles 5 (9): iv & item 10008. 1970; Gibson, Fieldiana Bot. 24 (9): 207 & 208. 1970; Misra, Bull. Bot. Surv. India 12: 126. 1970; Moldenke, Phytologia 20: 79. 1970; Moldenke in Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1330—1331. 1970; Reitz, Sellowia 22: 8. 1970; Tétényi, Infrasp. Chem. Taxa Med. Pl. 109. 1970; Angely, Fl. Anal. & Fitogeogr. S. Paulo, ed. 1, 4: xi & 834—835, map 1386. 1971; Bhakuni, M. L. & M. M. Dhar, Dhawan, Gupta, & Srimal, Indian Journ. Exp. Biol. 9: 97. 1971; Brandis, Indian Trees, imp. 2, 503. 1971; Long & Lakela, Fl. Trop. Fla. 742—743 & 945. 1971; Moldenke, Biol. Abstr. 52: 1316. 1971; Moldenke, Excerpt. Bot. A.18: 445. 1971; Moldenke, Fifth Summ. 1: 55, 71, 79, 81, 83, 85, 86, 88, 91, 97, 101, 103, 105, 106, 109, 110, 112, 113, 117, 124, 130, 132, 134, 136, 142, 155, 183, 186, 189, 198, 277, 347, 365, & 366 (1971) and 2: 531, 535, 537—542, 545, 546, 548, 550—556, 558, 559, 563, 567, 568, 573, 600, 601, 671, 679, 686, 736—738, 890, 967, 968, & 973. 1971; V. Singh, Journ. Bomb. Nat. Hist. Soc. 68: 343. 1971; C. D. Adams, Flow. Pl. Jamaica. 630, 792, 793, & 825. 1972; Alemán Frías, Aurich, Ezcurra Ferrer, Gutiérrez Vázquez, Horstmann, López Rendueles, Rodríguez Graquitená, Roquel Casabella, & Schreiber, Die Kulturpfl. 19: 422. 1972; Anon., Biol. Abstr. 53 (3): B.A.S.I.C. S.148 (1972) and 53 (5): B.A.S.I.C. S.146 & S.192. 1972; D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S. 1401. 1972; Korr, Biol. Abstr. 53: 1573. 1972; Moldenke, Phytologia 23: 413, 415—417, 426, & 432. 1972; R. R. Stewart, Annot. Cat. in Nasir & Ali, Fl. W. Pakist. 606. 1972; Altschul, Drugs & Foods 244. 1973; Farnsworth, Pharmacog. Titles 8 (1): ix (1973) and 9 (8): xiii. 1973; Hegnauer, Chemotax. Pfl. 6: [Chem. Reihe 21]: 663, 668, 669, & 674. 1973; Moldenke, Phytologia 25: 227, 240, & 245. 1973; Moldenke in Woodson, Schery, & al., Ann. Mo. Bot. Gard. 60: 67, 70—71, & 146. 1973; Bolkh., Grif, Matvej., & Zakhar., Chrom. Numb. Flow. Pl., imp. 2, 716. 1974; El-Gazzar, Egypt. Journ. Bot. 17: 75 & 78. 1974; Lasser, Braun, & Steyerl., Act. Bot. Venez. 9: 36. 1974; León & Alain, Fl. Cuba, imp. 2, 2: 288—289, fig. 124. 1974; Moldenke, Phytologia 28: 109, 450, & 459. 1974; Troncoso, Darwiniana 18: 334, 338, & 440. 1974; D. S. & H. B. Correll, Aquat. & Wetland Pl. SW. U. S., imp. 2, 2: 1395, 1401, 1739, 1744, 1746, 1755, 1758, 1762, 1773, & 1774. 1975; Hinton & Rzedowski, Anal. Esc. Nac. Cienc. Biol. 21: 75. 1975; López-Palacios, Revist. Fac. Farm. Univ. Los Andes 15: 56—57, fig. 10 & [11]. 1975; Mahesh., Journ. Bomb. Nat. Hist. Soc. 72: 180. 1975; Molina R., Ceiba 19: 96. 1975; Moldenke, Phytologia 31: 378

& 381 (1975) and 34: 256 & 257. 1976; Long & Lakela, Fl. Trop. Fla., ed. 2, 742-743 & 945. 1976; Soukup, Biota 11: 14. 1976; Moldenke, Phytologia 36: 30, 33, 34, 36, 40, 43, 44, 47, & 48 (1977) and 38: 257. 1978.

Additional illustrations: Sastri, Wealth India 6: 141, fig. 49. 1962; M. Martinez, Pl. Med. Mex., ed. 5, 464 [as *L. "berlandieri"*]. 1969; León & Alain, Fl. Cuba, imp. 2, 2: 288, fig. 124. 1974.

Recent collectors describe this plant as an herb, 50 cm. tall, a subshrub, or a low slightly woody and bushy shrub, 1-2 m. tall, erect, suffrutescent, aromatic, branched at the base, the branches low, weak, and arching, the roots woody, the bark brown, the leaves rugose, with a minty odor like that of certain *Mentha* species or of *Salvia officinalis*, the flowers fragrant, with a sweet odor, in solitary, axillary glomerules, and the corollas 4-lobed, the lowest lobe largest. Stearn calls it a "low growing, entangled, aromatic shrub less than 2 feet tall"; Hinton refers to it as "recumbent" and Gregg as "vine-like". Travers describes it as a "shrubby vine, 1 m. [tall]; basal diameter 1--2 cm., many stems ascending at first, then arching over to the ground from [a] basal rootstock". Singh calls it an "erect annual herb, leaves in whorls, inflorescence axillary".

Collectors have encountered the plant in dry secondary forests and dry deciduous savanna vegetation, on wooded hillsides, and steep heavily wooded slopes with *Pinus* and *Quercus*, in waste land, washes, swampy or gravelly waste places, and llanos, in very dry savannas and cultivated fields, on river flats, along streams, in white salty or black sandy soil, sandy loam, clay loam on road shoulders, and "in moist or semi-moist ground", flowering from January to April and June to September, in fruit in March, June, and July, at altitudes of sealevel to 1850 meters.

Gentry refers to the plant as an "aromatic rare ornamental shrub" in Sinaloa, Mexico. The Taylors found it "on rocky hillsides with tropical deciduous vegetation, soil thin, sandy, with gravelly peat in some places". Runyon, in Texas, describes it as "common in low ground" in Cameron County, "an aromatic shrub found occasionally in moist or semi-moist ground", "occasional on banks of the Rio Grande and the resacas", and "frequent along resaca banks and the river, the plant is sometimes prostrate when growing in the open, common in its preferred habitat, the flowers open during the day". King refers to it in Tamaulipas, Mexico, as a "shrub in low shrub-oak forests, locally abundant, 1 m. tall, in open sun".

Misra (1970) refers to *L. alba* as an "herb in orchards" in Bihar, India; Long & Lakela (1971) found it in "disturbed soil, low ground" on Key West, Florida. Duke speaks of it as a favorite cultivated medicinal plant in Panama. Webster & Wilbur found it "in grove of *Sabal texana*, *Celtis*, *Zanthoxylum*, *Tournefortia volubilis*, etc. on raised ground above level of cotton fields, in weedy areas at the edge of palm groves" in Texas. Fosberg found

it growing "in damp depressions on silt flats in the rainforest region, benches and steep slopes, partially cleared". Martínez-Calderón speaks of it as a "scarce, trailing, fragrant herb" and also as an "abundant annual herb in secondary vegetation of acahual" in Veracruz, Mexico. McVaugh encountered it on "steep slopes above canyon forested with Acacia, Caesalpinia, Lemaireocereus, Gliricidia, and arborescent Ipomoea".

The corollas are described as having been "lavender" on Croat 22546, Fosberg 28959, King 4035, Molina R. 22161, Ton 2506, and Tyson 3611, "lavender with yellow center" on Traverse 1169, "lavender with yellow eye" on Lundell 10644, "lilac-white" on Contreras 3486, "lilac with yellow center" on Hatschbach 17032, "blue" on Lima 41, "pale-blue" on Kerr 1714, "rose" on Martínez-Calderón 2228 and Proctor 18027, "pink" on Correll & Runyon 35488, Hinton 5720, 13149, & 13962, Runyon 4361, and Stearn 513, "pink-purple" on Runyon 2603, "rose-purple" on López-Palacios 4253, "purple" on Gregg s.n., Hinton 14024, Martínez-Calderón 1292 & 1924, Runyon 878, and Stevens & Stergios 166, "pale-violet" on Chiang 266 and Messer 21, "violet" on Martin & Lau-Cam 1244, Messer 72/202, and Valverde 411, and "pale-lavender with a central purple or brown spot" on Webster & Wilbur 3023. Thwaites (1861) refers to them as "pale-purple". On McVaugh 26051 they were "pink, paler around the yellow eye", while on M. Nee 10172 they were "light-purple, the throat first yellow, then purple" and on Liogier & Liogier 22419 "white".

The Corrells (1972) describe the habitat of L. alba as "Woods, low wetish bottomlands, river banks and resacas, Hidalgo and Cameron cos. n.e. to Wharton co. in Texas, Mar.—Oct.; widespread in W. I., Mex., C. A. and S. A., introduced elsewhere, widely cultivated". Thothathri and his associates (1966) report the plant common in marshy places near lakes in Bihar, India, citing Thothathri 9920. Rao & Rabha (1966) record it from Assam, while Subramanyam & Henry collected it in Madhya Pradesh, citing their no. 7284. Singh & Mitra (1946) describe it as rare in Uttar Pradesh. Malick (1966) refers to it as common in West Bengal and cites Banerji 277. Panigrahi (1966) found it in damp ground and alluvial soil in Bihar, citing his no. 11609. Maheshwari (1975) remarks that in Bihar it is "frequently found in marshy lands and moist situations".

Stewart (1972) asserts that L. alba is "Not rare in the Salt Range, the Sub-Himalayan tract and adjacent plains" in Pakistan, citing numerous collections from Baluchistan and the Northwest Frontier Provinces. However, he regards Lantana indica Roxb. as a synonym of Lantana alba Mill. (he adopts the latter binomial for the species), following Rechinger, and so I strongly suspect that his citations all refer to Lantana indica rather than to Lippia alba. I agree with C. B. Clarke that Lantana indica has

nothing to do with the true Lippia alba. It should be noted, however, that Thwaites & Hooker (1861) also synonymize Lantana indica and L. alba. Their "record", therefore, of what we now call Lippia alba from Sri Lanka is incorrect and refers, instead, to Lantana indica Roxb. Baker (1900) regards Lantana alba as a synonymy of Lantana rugosa Thunb.

It would appear that the "Lippia asperifolia asperifolia A. Rich ex Marthe" of Raju (1969) actually is L. indica Moldenke [not L. javanica (Burm. f.) Spreng. as previously recorded], as is plainly shown by his illustration of it, while the taxon which he calls L. alba is really the true L. alba (Mill.) N. E. Br. Numerous other authors have made a distinction between L. alba (or L. geminata H.B.K. as many refer to it) and "L. asperifolia Rich." -- for instance, Augusto (1946). In this case the taxon called L. asperifolia probably is L. alba var. globiflora (L'Hér.) Moldenke; in other cases it seems to be L. javanica (Burm. f.) Spreng. The "Lippia alba" of Troncoso (1965) is most certainly var. globiflora, as may readily be seen from her illustration of it.

Lantana lavandulacea Willd. is often regarded as a synonym of Lippia alba, but it seems definite to me, after an examination of type material thus named by Willdenow, that Willdenow's name is a straight synonym of Lippia javanica (Burm. f.) Spreng. and not of Lippia alba nor of Phyla scaberrima (A. L. Juss.) Moldenke as has also been suggested. His original (1800) description is "*11. LANTANA lavandulacea. W. L. foliis oppositis lanceolatis obtusis superne scabris, capitulis cylindraceutis, bracteis imbricatis subtrotundis acutis. W. Lavendelartige Lantane. W. Habitat.... ♀ (v.v.) In hortis nostris sub nomine L. odoratae obvia, sed abunde distincta. Caulis teretiusculus scaber. Folia oppositam numquam terna, petiolata, lanceolata obtusa, basi attenuata integerrima, obtuse dentata superne scabra, subtus hirta. Pedunculi foliis breviores. Capitula cylindracea. Bractee villosae subtrotundae acutae enerviae imbricatae. Flores admodum parvi albi. W."

It should also be pointed out here that the Verbena odorata Desf. and Zapania odorata Pers., often included in the synonymy of Lippia alba, belong, rather, in that of Lippia javanica. The original description of Zapania odorata Pers. (1806) is: "odorata, spic. oblongo-globosis, fol. lanceolatis crenatis rugosis scabris, caul. fruticoso. Verb. odorata H. P. V. globifera Willd. l. c. L'Herit. Stirp. l. p. 23, t. 12. Z. lantanoides Lam. Hab. in Amer. meridionali. Spic. demum teretes." It would appear, thus, that Persoon's name is merely nomenclaturally a transfer of the Verbena odorata of Desfontaines ["H.P." = Hort. Paris.] into the genus Zapania and must be typified by Desfontaines' type. The inclusion of L'Héritier's Verbena globiflora ["V. globifera Willd."] and Lamarck's Zapania lantan-

oides was the result of misidentification. The statement as to habitat applies to the two latter "synonyms", not to the basionym.

The actual type of Lippia alba [Lantana alba Mill.] was collected by William Houstoun in Campeche, Mexico, and is deposited in the Philip Miller herbarium at the British Museum (Natural History) in London; photographed there by Liberty H. Bailey as his type photograph number 5057. The distinguished N. E. Brown, in a detailed memorandum to N. L. Britton, asserts categorically that the Columbia University herbarium specimen of Pringle 1960 is an EXACT match for the Houstoun type "except that the leaves are rather more deeply toothed in Houstoun's plant". There is a photograph of the type in the Britton Herbarium, where it has been studied by me. Pringle 1960 is a very widely distributed collection, examples of which can be seen in the Brussels, Columbia, Berkeley, Gray, Iowa, Mexico City, Ann Arbor, New York College of Pharmacy, Stockholm, University of Vermont, and many other herbaria.

Datta & Majumdar (1966) refer to Lippia alba as a "Perennial erect undershrub.....Flowering in June" in Bengal and "Distributed in the tropics", while Majumdar (1965) asserts that it flowers from March to December in that Indian state. Kanjilal and his associates (1939) assert that in Assam it "apparently flowers and fruits nearly all year" and that its leaves are used as a vegetable in the Khasi hills. Srivastava (1964) tells us that Lippia alba was common in Bihar already in 1921-1925, that it was introduced into Bengal in 1872-1897 and thence moved westward in India. Curiously, Sampaio (1937) classifies it as a mint ("labiada"), probably because of its odor. Prain (1903) says that it occurs "In nearly every province" in Bengal, where it is "A shrub, 3-8 feet high". Clarke (1885) reports it "frequent" in Bengal, but citing only a Hooker collection from below Dacca (which is now in Bangladesh). He calls it "a widely dispersed weed" from tropical America "So closely resembling Lantana indica that without fruit it is difficult to distinguish".

Raju (1969), adopting the name L. javanica for this species, says that it "grows gregariously along rivers and tank bunds extending from Assam to Coimbatore in southwest and Andamans in southeast [India]. A community of Lippia javanica, Saccharum spontaneum Linn. Heliotropium strigosum Willd, Tephrosia purpurea (L.) Pers. and Indigofera tinctoria L. characterises the deltaic sands of Godavari at Gannavaram. The black alluvium of Hooghly and Brahmampura is colonised by many grasses and L. javanica. The soil pH varies from 6.5--8.0. Germination of seeds [is] governed by periodic inundation and drying, heaviness of the seeds seems to cause the dispersal in lower gradients by rainwash of floods. Many local names were given in West Indies and northern Central America where the natives prepare a tea from the leaves of L. javanica and administer [it] to cure stomach troubles. It is cooked as [a] vegetable in English usage. Ecologically the plant is of value as [a] soil-binder in controlling

erosion particularly in alkaline areas." He continues to say that "Meeuse [Blumea 5: 67. 1942] was the first to show that Verbena javanica Burm. f. and Lantana alba Mill. are conspecific and V. javanica has the priority. Therefore according to Art. 57 International code of Botanical Nomenclature of (1966) the correct name for this alien should be L. javanica". I reserve decision on this point until I can examine Burman's type.

Adams (1972) asserts that in Jamaica Lippia alba is "Local and sporadic, in the southern parishes, sometimes cultivated, mostly in thickets and gravelly waste places near the sea", flowering and fruiting there from March to October, and citing Harris & Britton 10593, Proctor 9421, and Robertson UCWI.3355. Its general distribution is given by him as "Texas, Mexico to Argentina and general throughout the West Indies; Grand Cayman".

It is of interest to note that Goyena (1911), in his work on the flora of Nicaragua, recognizes three taxa there: Lantana alba Mill., Lippia "gemminata Kunth", and Lippia asperifolia Rich., giving detailed descriptions of each, but citing no specimens. The true identification of his three taxa awaits more study.

Sessé & Mociffo's (1894) description of their Lippia crenata is as follows: "Lippia capitulis cylindricis, foliis ovatis, serratis. Frutex 8-pedalis. Rami oppositi, suberecti, quadrangulares, cinerei, glabri. Folia opposita, ovata, crenata, rugosa, subtomentosa, brevissime petiolata. Spicae axillares, cylindricae, foliis breviores. Bractea ovato-subrotundae, concavae, acuminatae, tomentosae. Reliqua ut in praecedenti cui valde affinis. Prop. Folia et flores fragrantis, licet non adeo intense ac praecedens [L. obovata Sessé & Moc.]. Observa in Herbario Lantanas, ad quas nonnullae Lippiae species indebite accumulatae sunt."

The Angely (1971) work cited in the bibliography of Lippia alba is sometimes cited as "1970", but was not actually published until 1971; the Buscalioni & Roccella (1923) work is sometimes erroneously cited as "1922". The Humboldt, Bonpland, & Kunth (1817) references have been checked as to actual date of publication by the late botanical bibliographer, Dr. John Handley Barnhart. Molina R. (1975) misspells Nicholas Edward Browne's (1849--1934) surname "Browne". The only botanists named Browne who have contributed to our knowledge of the Verbenaceae are Ashley C. Browne (who collected on Jarvis Island), Edward T. Jr. and Elizabeth W. Browne (who collected in Kentucky), and Patrick Browne (who collected in Jamaica).

The Lantana canescens Benth., referred to in the synonymy above, is a synonym of Lippia tepicana Moldenke, Lantana canescens Fedde is a synonym of Phyla nodiflora var. canescens (H.B.K.) Moldenke, while Lantana canescens Kunth and L. canescens Linn. belong to the synonymy of Lantana canescens H.B.K.

Lima states that Lippia alba is a "Planta do 1,20 cm de altura", but this must certainly be a misprint for "1.2 m.", illustrating

again the unfortunate misleading statements which can so easily be made with the use of the metric system of measurement in scientific descriptions.

Additional common and vernacular names for Lippia alba beyond those previously reported by me in this series of notes are: "achueriala", "ajkukuif mop (=atuelo de la ortiga), "basula", "bóng ôi", "chá dos tableiras", "cha do tableiro", "cidrela", "colic mint", "cullen mint", "daru kaini ba", "Guinea mint", "hierba del espiritu", "hierba de negro", "hierba del negro", "hierba negar", "jierba del negro", "juanislama", "lopong-brik", "mukurdu", "naga-aieri", "orego", "orozuz", "paí rá yvoty", "pampa-oregana", "pichas-bon", "pichas-lakri", "pitona", "reseda del campo", "salva colorado", "salva vida", "salvia santa", "salvia siga", "salvo do Brasil", "sideraera", "té de maceta", "té del pan", "té de pais", "tómilho sylvestre", "white lippia", and "wild sage". Martínez-Crovetto (1964) reports "kaguetá lche ltaá (=padre de la canilla de huasuncho)" applied to Lippia alba as well as to Aloysia virgata (Ruíz & Pav.) A. L. Juss. and Lantana camara L. by the Amerinds of the Chaco region.

Cave (1964) reports the haploid chromosome number as 15, the diploid as 30; Bolkhovskikh (1969), as well as Bose & Choudhury (1956, 1960), also report 30. Cummins (1940) reports the fungus, Prospodium lippiae (Speg.) Arth., attacking Lippia alba in Guatemala, based on Holway 617.

The following bi- and trinomials, previously listed by me in the synonymy of typical Lippia alba, must now be shifted to that of the newly established variety, L. alba var. globiflora (L'Hér.) Moldenke: Lippia globiflora Kuntze, L. globiflora (L'Hér.) Kuntze, L. globiflora albiflora Kuntze, L. globiflora α normalis Kuntze, L. globiflora var. normalis Kuntze, L. globiflora α normalis f. lilacina Kuntze, L. globiflora var. normalis f. lilacina Kuntze, L. globiflora f. pubescens Kuntze, Verbena globifera L'Hér., V. globifera Willd., V. globiflora L'Hér., V. globulifera Auct., V. globulifera L'Hér., V. globulifera Spreng., V. globuliflora L'Hér., Zapania globiflora A. L. Juss., Z. globiflora (L'Hér.) Juss., Z. globiflora (L'Hér.) Poir., Z. globiflora (L'Hér.) Willd., Z. globiflora (L'Hér.) Willd., Poir., & Juss., Z. globiflora Poir., Z. odorata Pers., Zappania globiflora Poir., and Z. odorata Pers.

Badhwar & Fernandez (1968) state that Lippia alba is found in Nefa, Assam, Bengal, Bihar, and Orissa, India, where it is "frequent and gregarious" and is "used as sage in cookery. Leaves are also used as a vegetable in Khasi Hills". They assert that in India it blooms "All the year round". Tyson says that it is used as a tea in the treatment of diarrhea in Panama; Diez Nieves & Stimson report its use by the natives of Puerto Rico in medicinal baths; Masser reports it cultivated in herb gardens near houses for its medicinal properties, its use in beef stews, and

as a remedy for sore throat and stomach ache. Martin & Lau-Cam say that it is a "small herb in clearings, used for diarrhea"; Hinton reports the "leaves very fragrant and their brew is good for stomach ache" in Mexico; Marie-Victorin reports it "cultivé en guise de Menthe autour des bohios" in Cuba; while Martínez-Crovetto (1965) tells us that "Frotando las hojas contra la piel se curan las paspaduras". Runyon found that in Cameron County, Texas, it is "used as a remedy for coughs and colds". Datta (1965) states that it is the source of a "valuable essential oil". Morton (1968) reports that it is plentiful in Curacao markets and that a decoction from the plant is commonly drunk as a pleasant tea there, it is taken as a digestive after overeating and in the treatment of stomach ache and colds. Further, he says, "people place a couple of the leaves under roasting meat to give it flavor". He asserts, however, that it is not the "oregano" of commerce, which is derived from the mint, Origanum. The "Mexican oregano" of Aruba is usually Lippia graveolens H.B.K., while still another popular "oregano" on the island is made from Coleus amboinicus.

Burlage (1968) avers that "this plant is found in Southwest [actually southeast!] Texas along the drainage of the Lower Rio Grande River. In tropical American countries a tea of the plant leaves is used in domestic medicine as a sudorific, antispasmodic, stomachic, and emmenagogue". Amico (1968) says "Indicazioni: raffreddori, malaria, malattia dell' apparato respiratorio; febbrifugo, antidissenterico". Uphof (1968) refers to it as a "sudorific, antispasmodic, emmenagogue, stomachic".

López-Palacios (1975) says of it "Es un frúctice...de agradable olor. En Venezuela está muy difundido; pasa por medicinal y es muy usado popularmente como tónico nervioso y estomacal, anti-reumático, antifebbrifugo, etc.", but it seems most probable that he is here referring mostly if not entirely to var. globiflora.

Martínez (1969) says of it in Mexico: "Se encuentra de Sinaloa a Tamaulipas, Veracruz y Oaxaca. En Jalisco, Veracruz y Oaxaca, se llama hierba buena; en Tabasco, té del país; en Oaxaca, té del pan o té de maceta; en Tamaulipas, hierba del negro; en Nayarit, sonora. La infusión alcohólica se administra en fricciones contra los resfriados. Se dice que la planta tiene propiedades sudoríficas, antiespasmódicas, estomáquicas y emenagogas". León & Alain (1974) enumerate the same uses from Cuba — "La planta ha sido usada como sudorífico, antiespasmódico, estomáquica, y emenagoga".

Peckolt (1904) seems to describe this plant (and possibly its var. globiflora) under two specific designations: For what he calls Lippia geminata H.B.K. he says: "In den Staaten vom Äquator bis zum 30.° südl. Br. bekannt als Salva — Salbei und Tómilho sylvestre — Wilder Thymian...Strauchartige Pflanze mit oval-länglichen, spitzen, an der Basis keilförmigen, gesägten, oberseits strieglich-rauhen, unterseits befilzten Blättern. Blüten violettrotlich. Die Blätter riechen ähnlich einer Mischung von Salbei und Thymian, haben den Ruf als Antikatarrhale und Diaph-

oretikum. Du Cursino de Moura hat mit der Pflanze therapeutische Versuche ausgeführt und diese an seiner These 1884 publiziert. Ich fand sie wirksam bei Bronchialkatarrh und als mildes Exzitans, doch keine schweisstreibende Wirkung. Apotheker Gustav Peckolt hat in der Revista pharmaceutica, Rio de Janeiro 1884, S. 184, die untersuchung publiziert. Die frischen Blätter enthalten: Wasser 78,09 pCt., ätherischen Öl 0,123 pCt., gelbes Harz 0,71 pCt., Asche 1,96 pCt. usw." Under the name, Lippia asperifolia Rich., he says "Auf den Hochebenen des Staates Minas bekannt als Chá dos tableiras, mit wohlriechenden Blättern. Wird wie die vorhergehenden benutzt."

Choudhury & Bose (1961) report extracting an olive-yellow oil, d. 0.938, n_D³⁰ 1.4949, from the leaves of Lippia alba. Fester and his associates (1960) extracted d-limonene, d- α -pinene, dipentene, lippione, 1-piperitone, dihydrocarvone, camphor, and an unknown ketone (semicarbazone, mp. 233⁰) in essential oil. Da Silva (1970) extracted an active principle from the glandular hairs on the leaves and made chromatographic comparisons with pattern solutions of the main components. Karrer (1958) reports the presence of ocimen, C₁₀H₁₆, in Lippia alba, as well as in such unrelated species as Ocimum gratissimum, Ovodia rutaecarpa, Tagetes glandulifera, Eriostemon myoporoides, Boronia anemonifolia, Agonis luchmanni, Litsea zeylanica, Phebalium beckleri, Citrus bigaradia, Cymbopogon martini, Salvia sclerea, and Heracleum mantegazzianum. He also reports the presence of ocimenon, C₁₀H₁₄O, and myrcenon, C₁₀H₁₄O.

Sastri (1962) refers to this species as "A strongly aromatic, erect, much-branched shrub, 0.9—2.4 m. high, found in wet situations and muddy river banks from Bihar and Orissa to Assam, Madhya Pradesh, Nilgiris and Anaimalais up to 900 m. ... The plant is used as a sage in cookery. Leaves are used as a vegetable in Khasi hills. They are considered stomachic and nervine in some parts of Brazil and Paraguay. The air-dried leaves from Calcutta yield 0.26 percent of an olive brown essential oil, with the following characteristics: sp. gr. 30⁰, 0.938; n_D³⁰, 1.4949 [α]_D, +1.7⁰; acid val., 9.40; ester val., 39.6; acet. val., 124.50; insol. in 70—90 percent alcohol, sol. in chloroform and ether. The constituents of the oil vary with the source of origin; dipentenes, d- and l-limonene, 1-piperitone, lippione (C₁₀H₁₄O₂, b.p./4 mm., 80—80⁰), a saturated ketone, d- α -pinene, d-1-dihydrocarvone, citral and camphor have been identified in different samples."

Troncoso (1974) cites Burkart 27591 from Corrientes, Argentina, in the San Isidro herbarium, and Marchiore s.n. from Santa Catarina, Brazil, in the Reitz herbarium, but both of these are probably var. globiflora. Altschul (1973) cites Marie-Victorin 21414 from Cuba in the Gray Herbarium; Griffith & Hyland (1966) cite U. S. Dept. Agr. Pl. Invent. 262192, grown in Maryland from seeds of Gentry 18364 from Sinaloa, Mexico; Teague (1965) cites

Teague 91 & 378 from Paraguay; and Macbride (1960) cites Weberbauer 6013 & 6346, Ll. Williams 183, 344, 1559, 2212, 2636, 3055, 4475, 4997, 5581, 7325, & 7359 from La Libertad, Loreto, Piura, and San Martín, Peru, but these South American collections probably represent var. globiflora. Lasser and his associates (1974) report L. alba cultivated in Venezuela.

Peele 976, cited below, has very large lanceolate leaves and is described as an upright branching herb, 2.5 feet tall, the crushed foliage emitting a licorice-like odor, and the corolla-lobes light-yellow -- it may very well represent L. alba var. carterae Moldenke, which see. Ridoutt 164, from Peru, is also said to have had yellow flowers.

Material of Lippia alba has been misidentified and distributed in some herbaria as Aloysia chiapensis Moldenke, Lantana involu-crata L., L. odorata L., L. trifolia L., Lippia hispida H.B.K., L. organoides H.B.K., Phyla sp., Terammus labialis Spreng., and Waltheria americana L.

On the other hand, the Caldwell 119, distributed as Lippia alba, actually is Aloysia gratissima var. schulzae (Standl.) Moldenke; U. S. Dept. Agr. Pl. Invent. 262192 is A. nahuire Gentry & Moldenke; "S. C. J." s.n. [231/03] is A. virgata (Ruiz & Pav.) A. L. Juss.; Pittier 6172 is Lantana caracasana Turcz.; Archer 227 is L. fucata Lindl.; Collector undetermined 1408 & 1409 and G. Thomson s.n. [Maisor & Carnatic] are Lantana indica Roxb.; Acle & Guerrero 145, G. L. Fisher 32242, Gentry & Engard 23227, Mearns 1153, 1188, & 1228, Tharp 5904, and Tharp & York 51-135 & 51-142 are L. macro-poda Torr.; Gaumer & sons 478 and Ortiz 1780 are L. microcephala A. Rich.; K. H. Rechinger 29486, 29517, & 30173 and T. Thomson s.n. [1-4000 ped.] are L. rugosa Thunb.; Tharp & Johnston 541938 is L. velutina Mart. & Gal.; Harmon & Dwyer 3715 is Lippia cardiostegia Benth.; Garza Gongora, Anda, & McCart 8471, Molina R. 13202 & 23211, and Molina R. & Molina 22727 & 22829 are L. graveolens H.B. K.; Arechavaleta s.n. [Herb. Mus. Hist. Nat. Montev. 1132], Berro 86, A. L. Cabrera 2581, A. Castellanos s.n. [Herb. Inst. Miguel Lillo 15044], Hassler 11112, Herter 747 [Herb. Herter 82833] & 747a [Herb. Herter 82658], Martius 2738 & s.n. [Rio Negro], T. Meyer 10404 & 10580, Osorio s.n. [Herb. Mus. Hist. Nat. Montev. 13930], Pierotti 4087, T. Rojas 12082, and Rosengurtt B.950 are L. lorentzii Moldenke; Barr, Dennis, & Hevley 62-707 is L. oaxa-cana Robinson & Greenm.; Tamayo 326 is L. organoides H.B.K.; France, Forero, Coêlho, Ramos, & Farias 5847 and France, Philcox, Forero, Coêlho, Ramos, & Farias 5351 are L. rondonensis Moldenke; Semple 595 is Phyla nodiflora var. incisa (Small) Moldenke; Harriman 10822 and Taylor & Taylor 11371 are P. scaberrima (A. L. Juss.) Moldenke; and Strother 93 is P. strigulosa var. sericea (Kuntze) Moldenke. Griffith & Hyland (1966) cite the U. S. Dept. Agr. Pl.

Invent. 262192 as Lippia alba, but it actually is Aloysia nahuire Gentry & Moldenke. The "Lippia asperifolia" of Reiche & Philippi (1910) is Lippia turbinata Griseb.

The following collections were either distributed as or previously cited by me (or both) as L. alba, but actually seem to represent var. globiflora (L'Hér.) Moldenke: Alvarez 909, N. J. Anderson s.n. [Buenos Ayres] & s.n. [Lima, 17 Mars 1852], Archer 8266, Asplund 17605 in part, Barbosa da Silva 2, Bond, Gillin, & Brown 166, W. E. Broadway 99, Castellanos s.n. [Herb. Inst. Miguel Lillo 15761], Commerson s.n. [Buenos Ayres et Monte Video], Cuezzo 1127, Drouet 2561, Dusén 14170, Ekman 2015, Eyerdam & Beetele 22993, Hassler 960, 7367, & 7397, Hatschbach 17032 & 22166, Hatschbach, Lindeman, & Haas 13318, Henz s.n. [Herb. Rambo 35351], Herb. Acad. Rheno-Trai. 123, Herb. Herter 10052 & 95310, Herb. Imp. Vien. 183, Herb. Martius s.n., Herb. N. Y. Coll. Pharm. s.n., Heringer 378 [Herb. Inst. Bot. S. Paulo 44564], A. S. Hitchcock 20206, Humboldt & Bonpland s.n. [Macbride photos 39485], Ibarrola s.n. [12-I-1945], Job 650 & 748, Jørgensen s.n. [Herb. Mus. Argent. Cienc. Nat. 23944], N. L. H. Krauss 273, Kuntze s.n. [Mattogrosso, VII.92], s.n. [Concepcion del Paraguay], & s.n. [Concepcion, September 1892], Leite 660, Lemoine 7844, J. M. Lima s.n. [Herb. Jard. Bot. Rio Jan. 48998], Lindeman & Haas 1786, Lüderwaldt s.n. [Herb. Inst. Bot. S. Paulo 20080], Macedo 2612 & 3280, Malme 902 & 1880a, T. Meyer 8790, 10058, & 10099, Moldenke & Moldenke 19630, Monteiro da Costa 43, I. Morel 194, 690, 1120, 1314, 1491, 1636, & 3867, Ozimo de Carvalho 6 [Herb. Inst. Bot. S. Paulo 3462], Pedersen 1153 & 1906, M. A. Pereira 926, Ragonese s.n. [Herb. Mus. Argent. Cienc. Nat. 19776], Rambo 38012 & 49694, Reales 480, Reitz C.359, Rocha 91, Rodrigo 952, Rodriguez 6161 [Herb. Inst. Miguel Lillo 32241] & s.n. [Herb. Mus. Argent. Cienc. Nat. 23771], T. Rojas 1874 [Herb. Osten 13566], 12212, & 13803, Rosengurt B.1959, Ruiz Huidobro 2037, 3078, 3116, 3230, 3292, 3309, 3343, 3387, 3879, 3888, & s.n. [Herb. Inst. Miguel Lillo 2184], H. H. Rusby 916, Sagot 469, Sampaio s.n. [Herb. Mus. Nac. Rio Jan. 19923], Scala 2003, A. G. Schulz 134, 863, 1500, & 1501, G. J. Schwarz 559, Sieber s.n. [Pará; comm. Hoffmannsegg 1830], R. F. Steinbach 413, Stellfeld 1253 [Herb. Mus. Paran. 2364], G. H. H. Tate 130, Venturi s.n. [Herb. Mus. Argent. Cienc. Nat. 23767], O. E. White 905, and Woolston 818. It is almost certain that most, if not all, of the other South American collections previously cited by me as typical L. alba will prove, on re-examination, to represent var. globiflora instead.

Additional citations: FLORIDA: Key West: Avery s.n. [1964] (Ft--7937). TEXAS: Cameron Co.: D. S. Correll 36817 (Au--285022, Ld); Correll & Runyon 35488 (Ip, Ld); Cory 51445 (Mi); C. L. Lundell 10644 (Mi); R. Runyon 878 (Au), 2177 (Au--269261), 2603 (Au--

267704), 3170 (Au--269597), 4361 (Au--269595), 4866 (Au--269733, Ws); Webster & Wilbur 3023 (Mi, N). Hidalgo Co.: Cory 253 (Au--121167); Fleetwood 3055 (Au--180205); Travers 1169 (Au--179134). Willacy Co.: M. C. Johnston 53253.30 (Au--121166). MEXICO: Chiapas: Ton 2186 (Mi), 2506 (Ws). Guerrero: Hinton 14024 (Se--120049). Jalisco: R. McVaugh 26051 (Mi). México: Hinton 4101 (Ba), 14024 (Tu--111956). Michoacán: Hinton 13149 (Se--120048, Tu--111960), 13962 (Se--120071, Tu--112122). Nayarit: Feddema 578 (Au--263622); M. E. Jones 23230 (E--969963). Oaxaca: Kenoyer 2432 (Au--121158). Tamaulipas: Berlandier 874 (Ms--30873); R. M. King 4035 (Au--189638); Pringle 1960 (Ms--30872); J. Rzedowski 10845 (Ac). Veracruz: Chiang 266 (Ac); Martínez-Calderón 1292 (Ac), 1924 (Ac, Mi), 2228 (Mi, Z). Zacatecas: Taylor & Taylor 6052 (N). State undetermined: Gregg 920 (E--116651), s.n. [1848-49] (E--116652). GUATEMALA: El Petén: Contreras 3486 (Au--278569, Ld, Ld, W--2795341); Ortiz 1151 (N). HONDURAS: Cortez: Hernández M. & Barkley 40479 (Ac). Ocotepeque: Molina R. 22161 (N). NICARAGUA: Managua: Stevens & Stergios 166 (Ln--242454). Matagalpa: Dudey 1038 (Vt); Hamblett 1042 (Ac); C. E. Nichols 1067 (Vt). Rio San Juan: Atwood 5180 (Mi, N). COSTA RICA: Province undetermined: Worthen s.n. [Apr. 1910] (E--116647). PANAMA: Canal Zone: M. Nee 10172 (Ac). Chiriquí: Croat 22546 (N, W--2745298). Panamá: J. A. Duke 14436 (E--1981245, Oh). Veraguas: Tyson 3611 (E--1938940). HISPANTOLA: Dominican Republic: Ekman H.15802 (Ld); Liogier & Liogier 22419 (N). Haiti: Ekman H.3514 (Ld). JAMAICA: Stearn 513 (Ba). PUERTO RICO: Diaz Nieves & Stimson 1610 (Mi, N); Eggers 864 (Mu--3874); L. S. Smith PR.27 (Ld); I. Vélez 1114 (Lv). WINDWARD ISLANDS: Martinique: Larsen & Larsen 34648 (Ac). St. Lucia: G. R. Proctor 18027 (W--2584992). NORTHERN SOUTH AMERICAN ISLANDS: Margarita: Miller & Johnston 125 (Tu--148325). COLOMBIAN CARIBBEAN ISLANDS: San Andres: López-Palacios 2656 (Ld). SWAN ISLANDS: Great Swan: Proctor 32619 (Ld). COLOMBIA: Antioquia: López-Palacios 2656 (N). Bolívar: Castañeda Romera 9295 (N). Guajira: Saravia T. 2850 (W--2587670); Saravia T. & Johnson 314 (W--2587498). Magdalena: Perez A. 5164 (N). Meta: López-Palacios 3917 (Ac, N). VENEZUELA: Lará: Pittier 13118 (E--953436). Mérida: López-Palacios 2615 (Ft); López-Palacios & Bautista 3551 (N). ECUADOR: Guayas: Asplund 17605 in part (Ld, N); Fagerlind & Wibom 138 (Ld); Holm-Nielsen & Jeppesen 80 (Ac, Ld, N); Valverde 411 (Ws). Los Ríos: Schimpff 330 (Mu). Napo: López-Palacios 4253 (Ld). PERU: La Libertad: Ridoutt 164 (Ac). Lima: G. W. Barclay 304 (W--2779850). Loreto: F. R. Fosberg 28959 (Ld). Padre Island: Martin & Lau-Cam 1067 (Oa). BRAZIL: Amazônas: Prance,

Maas, Woolcott, Monteiro, & Ramos 16311 (Ac, N). Paraná: Hatschbach 17032 (W--2536541); Hatschbach, Lindeman, & Haas 13318 (Ac, W--2563890). Rio Grande do Norte: N. Lima 41 (Ac). Rio Grande do Sul: Rambo 38012 (B), 39489 (B). Rondônia: France, Philcox, Forero, Coêlho, Ramos, & Farias 5351 (N). Tabatinga: López-Palacios 3658 (Ld, N). BOLIVIA: Cochabamba: R. F. Steinbach 413 (S). URUGUAY: Izaguirre & Rezzano 2130 (W--2600322). ARGENTINA: Chaco: T. Rojas 12082 (N). Corrientes: Krapovickas & Cristóbal 11591 (W--2481394), 13568 (Ac, Ld). Santa Fé: Alvarez 908 (Au--121159, Ms--34155). INDIA: Bihar & Orissa: F. H. W. Kerr 1714 (Ac). Khasi States: Hooker & Thomson s.n. (Pd). West Bengal: Mukherjee s.n. [2.1.70] (Ld). CULTIVATED: Brazil: Spies s.n. [Herb. Anchieta 47332] (B). India: B. Singh s.n. [12th Nov. 1957] (Kl--4371). Mexico: Messer 21 (Mi), 72/202 (Mi). Pennsylvania: Peele 976 (Ba). Peru: Martin & Lau-Cam 1244 (Oa). Puerto Rico: Montalvo & Stimson 3863 (Mi). LOCALITY OF COLLECTION UNDETERMINED: Berlandier 2304 (Mi).

LIPPIA ALBA var. CARTERAE Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.10: 271. 1966; Moldenke, Phytologia 13: 346. 1966; Moldenke, Fifth Summ. 1: 71 (1971) and 2: 890. 1971.

The Peele 976, cultivated in Pennsylvania, and Ridoutt 164, from Peru, cited above under typical L. alba, are said by their collectors to have had yellow flowers and probably should be compared with the present taxon.

Additional citations: MEXICO: Baja California: Carter & Ferris 3864 (Au--271042--isotype, N--isotype).

LIPPIA ALBA var. GLOBIFLORA (L'Hér.) Moldenke, Phytologia 20: 79. 1970.

Synonymy: Verbena globiflora L'Hér., Stirp. Nov. 1: 22--23, pl. 12. 1786. Zapania globiflora (L'Hér.) Willd. in L., Sp. Pl., ed. 4, 1: 116. 1797. Verbena gobiflora Ruiz & Pav., Fl. Peruv. & Chil. 1: 21, sphalm. 1797. Verbena globifera L'Hér. ex A. Rich. in Marthe, Cat. Pl. Jard. Méd. Paris 67, in syn. 1801. Zapania globiflora A. L. Juss., Ann. Mus. Hist. Nat. Paris 7: 72. 1806. Zapania odorata Pers., Syn. Pl. 2: 140. 1806. Zappania globifera (L'Hér.) Desf., Tabl. Écol. Bot., ed. 2, 65. 1815. Lippia geminata H.B.K., Nov. Gen. & Sp. Pl. 2: 266. 1818 [not L. geminata Millsp., 1930, nor Schl., 1964]. Verbena odorata Pers. ex Steud., Nom. Bot., ed. 1, 873 & 898. 1821 [not V. odorata Desf., 1841, nor Meyen, 1834, nor Meyer, 1946]. Verbena globulifera L'Hér. apud Spreng. in L., Syst. Veg., ed. 16, 2: 751, in syn. 1825. Lantana geminata (H.B.K.) Spreng. in L., Syst. Veg., ed. 16, 2: 763. 1825. Lippia geminata Kunth apud Spreng. in L., Syst. Veg., ed. 16, 2: 763, in syn. 1825; Schau. in A. DC., Prodr.

11: 582. 1847. Lippia citrata Cham., Linnaea 7: 214. 1832. Lippia citrata Willd. ex Cham., Linnaea 7: 215, in syn. 1832. Lantana geminata Spreng. apud Steud., Nom. Bot., ed. 2, 2: 8. 1841. Verbena globulifera Auct. ex Steud., Nom. Bot., ed. 2, 2: 54 & 750, in syn. 1841. Lippia geminata Humb. & Bonpl. ex Steud., Nom. Bot., ed. 2, 2: 54, in syn. 1841. Zappania odorata Pers. ex Steud., Nom. Bot., ed. 2, 2: 797, in syn. 1841. Lippia geminata Humb. & Kunth ex Benth., Bot. Voy. Sulph. 153. 1846. Zapania globiflora Poir. apud Schau. in Mart., Fl. Bras. 9: 236, in syn. 1851. Zapania geminata (H.B.K.) Gibert, Enum. Pl. Montev. 44. 1873. Lippia globiflora (L'Hér.) Kuntze, Rev. Gen. Pl. 3 (2): 251. 1898. Lippia globiflora φ geminata (H.B.K.) Kuntze, Rev. Gen. Pl. 3 (2): 251—252. 1898. Lippia globiflora albiflora Kuntze, Rev. Gen. Pl. 3 (2): 252, nom. nud. 1898. Lippia globiflora f. pubescens Kuntze, Rev. Gen. Pl. 3 (2): 252, nom. nud. 1898. Lippia globiflora α normalis Kuntze, Rev. Gen. Pl. 3 (2): 251. 1898. Lippia globiflora α normalis f. lilacina Kuntze, Rev. Gen. Pl. 3 (2): 251. 1898. Lippia globiflora Kuntze apud Thiselt.-Dyer, Ind. Kew. Suppl. 2: 106, in syn. 1904. Lippia globiflora var. normalis Kuntze apud Briq., Ann. Conserv. & Jard. Bot. Genève. 7-8: 315. 1904. Verbena globulifera Spreng. apud H. J. Lam, Verbenac. Malay. Arch. 369, in syn. 1919. Lippia globiflora var. geminata (Kunth) Kuntze adud Sectt., Rev. Univ. Nac. Córdoba 17: 89. 1930. Zapania globiflora (L'Hér.) Willd., Poir., & Juss. ex Moldenke, Lilloa 4: 294, in syn. 1939. Lippia globiflora var. geminata (H.B.K.) Kuntze ex Moldenke, Carnegie Inst. Wash. Publ. 522: 165, in syn. 1940. Zapania globiflora (L'Hér.) Juss. ex Moldenke, Prelim. Alph. List Invalid Names 54, in syn. 1940. Zapania globiflora (L'Hér.) Poir. ex Moldenke, Prelim. Alph. List Invalid Names 54, in syn. 1940. Lippia globiflora var. normalis f. lilacina Kuntze ex Moldenke, Lilloa 5: 419, in syn. 1940. Verbena globuliflora L'Hér. ex Augusto, Fl. Rio Grande Sul 235, sphalm. 1946. Lippia balsamea Mart. ex Moldenke, Alph. List Invalid Names Suppl. 1: 13, in syn. 1947. Lantana geminata (Kunth) Spreng. ex Moldenke, Résumé Suppl. 9: 3, in syn. 1964. Zappania globiflora Poir. ex Moldenke, Résumé Suppl. 11: 8, in syn. 1964.

Bibliography: L'Hér., Stirp. Nov. 1: 22—23, pl. 12. 1786; Ruiz & Pav., Fl. Peruv. & Chil. 1: 21. 1797; Willd. in L., Sp. Pl., ed. 4, 1: 116. 1797; Marthe, Cat. Pl. Jard. Méd. Paris 67. 1801; Desf., Tabl. Écol. Bot., ed. 1, 54. 1804; Pers., Syn. Pl. 2: 140. 1806; Desf., Tabl. Écol. Bot., ed. 2, 65. 1815; Jan, Elench. Pl. 1. 1824; Spreng. in L., Syst. Veg., ed. 16, 2: 751. 1825; Steud., Nom. Bot., ed. 2, 2: 54 & 750. 1841; Schau. in A. DC., Prodr. 11: 556 & 583. 1847; Schau. in Mart., Fl. Bras. 9: 236. 1851; Buek, Gen. Spec. Syn. Candoll. 3: 252, 266, 494, &

507. 1858; Rojas Acosta, Cat. Hist. Nat. Corrient. 205. 1897; Kuntze, Rev. Gen. Fl. 3 (2): 251--252. 1898; Briq., Ann. Conserv. & Jard. Bot. Genève. 7-8: 315. 1904; Briq. in Chod. & Hassl., Bull. Herb. Boiss., ser. 2, 4: 1157. 1904; Briq. in Chod. & Hassl., Fl. Hassler. 2: 493. 1904; Thiselt.-Dyer, Ind. Kew. Suppl. 2: 106. 1904; H. J. Lam, Verbenac. Malay. Arch. 369. 1919; Moldenke, Bull. Torrey Bot. Club 58: 463. 1931; Moldenke, Lilloa 4: 294 (1939) and 5: 419. 1940; Moldenke, Prelim. Alph. List Invalid Names 54. 1940; Augusto, Fl. Rio Grande Sul 223 & 235. 1946; Moldenke, Résumé Suppl. 8: 6 (1964) and 11: 8. 1964; Troncoso in Cabrera, Fl. Buenos Aires 5: 146--147, fig. 49. 1965; Moldenke, Phytologia 20: 79. 1970; Moldenke, Biol. Abstr. 52: 1316. 1971; Moldenke, Excerpt. Bot. A.18: 445. 1971; Moldenke, Fifth Summ. 1: 136, 155, 183, 189, 198, & 336 (1971) and 2: 551, 552, 554, 555, 671, 736, 738, 890, 967, & 968. 1971; Moldenke, Phytologia 25: 245. 1973; López-Palacios, Revist. Fac. Farm. Univ. Los Andes 15: 56--57, fig. 10 & [11]. 1975; Soukup, Biota 11: 14. 1976; Moldenke, Phytologia 36: 30, 34, 36, 40, 43, 44, 47, & 48. 1977.

Illustrations: L'Hér., Stirp. Nov. 1: pl. 12. 1786; Troncoso in Cabrera, Fl. Prov. Buenos Aires 5: 146, fig. 49. 1965; López-Palacios, Revist. Fac. Farm. Univ. Los Andes 15: fig. 10. 1975.

Further study of the mass of material cited by me previously as typical L. alba (Mill.) N. E. Br. persuades me that the very large-leaved, very hairy, and mostly southern material ought to be segregated as at least a variety. All the material cited by me in previous installments of these notes should be re-examined in light of this decision, but in the meantime the following specimens have been re-annotated by me. Whether Kuntze's presumably varietal name (1898) has priority over the one I have adopted will depend on a careful re-examination of the type of Lippia geminata H.B.K. which is placed in the synonymy here only tentatively.

Collectors describe L. alba var. globiflora as a small or low fragrant shrub or subshrub, 0.4--3 m. tall, or as a decumbent or procumbent "semi-shrub", the branches decumbent or trailing, the leaves aromatic and lemon-scented. They have found it growing in capoeira, on shrubby slopes, among shrubs on sandy riverbanks, in swampy areas, on rocky riverbanks, at the edges of sandy or grassy river barrancas, on floodplains and dry savannas, along roadsides, and in dryish sunny soil on sandy riverbanks, at altitudes of 20--1430 meters, flowering and fruiting in every month of the year. Pedersen reports it "common in deep loose sand" or "fairly common in sunny pastures, seems to prefer sandy soil with subsoil of 'grada'". Schulz found it to be "very abundant" in the Chaco. France and his associates describe it as an "herb growing on floating log". Sakane calls it a "planta semi-arbustiva, folhas perfumadas" in Brazil, while Steinbach says of it "habitat terrenos con buena tierra y humedad entre la maleza, hojas muy fragranciosas tomadas en infusion por los nativos para pacificar la sangre y como bebida estimulante" in Bolivia. Henz also reports it as medicinal in Brazil, while Barbosa da Silva says that

a tea made from its leaves is used to counter the effects of purgatives. Rambo reports that in Rio Grande do Sul it is "generatim culta quia medicinalis, sed vere indifena, quamquam rara". Morel reports it medicinal in Argentina and Rosengurtt avers that it is used as a cold remedy in Uruguay; Woolston reports it medicinal in Paraguay. Krapovickas and his associates report finding it "en palmar de yatap, loma arenosa, lugar bajo, ramas de 1.5 m. tendidas en el suelo". Troncoso (1965) asserts that in Argentina it is "Frecuente en los bosques ribereños de Punta Lara y del Delta, y en cercos vivos", citing Burkart 8552, Cabrera 7240, and Venturi 117 in the San Isidro herbarium.

The color of the corolla is said to have been "lavender" on Eyerdam & Beetle 22993 and Krause 273, "rose" on Broadway 99, Herb. Herter 95310, Rojas 12212 & 13803, Ruiz Huidobro 2037, 3078, 3116, 3230, 3292, 3309, 3879, & 3888, Schinini 6727, and Schwarz 559, "pink" on Hitchcock 20206, "lilac-rose" on Rodrigo 952, "lilac" on Hatschbach 22166 & 34570, Meyer 10058 & 10099, Sakane 286, Sampaio s.n., and Schinini & al. 11124, "lilac, center yellow" on Hatschbach 17032, "light-violet with yellow throat" on Asplund 17605, "rose-lilac" on Kuntze s.n. [Concepcion] and Schulz 1500 & 1501, "purple (10P 7/6)" on Lindeman & Haas 1786, "purple-pink" on Woolston 818, "pale-purple" on France & al. 6597, "violet" on Lemoine 7844, "violet (10P 7/6)" on Hatschbach & al. 13318, "blue" on Ibarrola s.n., "pale rose-purple, the inner center of the corolla orange-yellow, white at the base" on Steinbach 413, "yellowish-white" on Herb. Inst. Miguel Lillo 2184, "white" on Barbosa da Silva 2, and "white, slightly rosy" on Rambo 49694.

Vernacular names recorded for this variety are "erva-cidreira", "erva-cidreira da árvore", "herva cidreira", "malmequer do mato", "melissa", "pié-pié", "salva limão", "salva-limão", "salvia", "sidreira", "verveine à globules", and "zappania globuleux".

L'Héritier's original (1786) description of this taxon is: "V[erben]a tetrandra, floribus capitatis, caule fruticoso. Nepeta maxima, flore albo, spicâ habitiori. Sloan. jam. 65. hist. l. p. 173. t. 108. f. 1. Habitat in Americâ calidiore. | H. P. Frutex humilis, fragrans. *Descensus. Radix lignosa, ramosa, fibrosa, cinerea. *Ascensus. Caulis lignosus, erectus, ramosus, vix rimosus, cinereus, altitudine humanâ. Rami erecti, teretes, cauli conformes. Ramuli scabri, medullosi, badii. Turiones villosi, scabri, e quadrangulo teretes, apice virides. *FronDESCENTIA. Folia opposita, raro terna, breviter petiolata, patentia, lanceolata, utrinque acuta, crenata s. obtuse serrata, imâ basi integra, attenuata in petiolum, nervosa: nervis erectis, alternis, infra prominentibus, supra lineatis; venosissima, rugosa, villosa, scabra, reclinata, persistentia, fragrantia, 1 1/2 poll. lon. 8. lin. lat. Petioli folio 6 breviores, hinc teretes, inde sulcati planive, villosi, decurren'te folio marginati. *InflORESCENTIA. Capituli ad apicem turionum axillares, pedunculati, subrotundi,

bracteati, imbricati, 3. lin. lat." The Sloane name cited by L'Héritier applies to typical L. alba (Mill.) N. E. Br. The "H. P." in the description indicates that L'Héritier's type was collected from plants cultivated in the Jardes des Plantes at Paris from seed sent from Buenos Aires and is presumably deposited in the Paris herbarium. In view of this the specimen in the British Museum herbarium and collected in South Africa, collector undetermined, regarded by the photographer of Missouri Botanical Garden photograph A.865 as the type of Verbena globiflora L'Hér. cannot be so regarded. It actually represented Lippia javanica (Burm. f.) Spreng.

In considering that var. globiflora is based on specimens grown from seeds sent from Buenos Aires, Argentina, it should be borne in mind that typical L. alba, in contradistinction, is based on specimens grown from seeds sent from Campeche, Mexico.

López-Palacios (1975) cites the date of L'Héritier's work as "1785". The Ruiz & Pavon (1797) reference, cited above, if often mis-cited as "1798", the title-page date.

The type of L. globiflora ♂ normalis is Kuntze s.n., collected at Concepcion in September, 1892, while his var. normalis f. lilacina is based on Kuntze s.n. from Concepcion del Paraguay and s.n. from Mattogrosso, collected in July, 1892. Lippia citrata is based on Sieber s.n. from Pará, Brazil [comm. Hoffmannsegg 1830]. Lippia geminata is based on a Humboldt & Bonpland collection from Venezuela. Lippia balsamea is based on a Martius collection from Rio Grande do Sul, Brazil.

It appears that the "Lippia alba" of Troncoso (1965) and of López-Palacios (1975) is actually, in major part, at least, var. globiflora.

Material of this variety has been misidentified and distributed in some herbaria as Aloysia chiapensis Moldenke, Bacopa aquatica Aubl., Hyptis stricta, Labiatae, Lantana sp., Lippia alba (Mill.) N. E. Br., L. organoides H.B.K., Mikania hassleri-ana f. cuneifolia Chod., and Zapania sp.

Citations: MEXICO: Chiapas: Ton 2186 (N). San Luis Potosí: N. L. H. Krause 273 (Z). Tamaulipas: Berlandier 230h (Du--166557, E--119730, G, M, T); Pringle 1960 (Mu--3875); Wislizenius 378 (E--116656). VENEZUELA: Apure: Humboldt & Bonpland s.n. [Macbride photos 39485] (Kr--photo, N--photo, N--photo, W--photo). Delta Amacuro: Bong, Gillin, & Brown 166 (N, W--1189880). SURINAM: Herb. Acad. Rheno-Trai. 123 (N); Herb. N. Y. Coll. Pharm. s.n. (Pa). FRENCH GUIANA: W. E. Broadway 99 (N); Collector undetermined s.n. (Pd); M. Lemoine 784h (N); Sagot 469 (T). ECUADOR: Guayas: Asplund 17605 in part (N); Eggers 14209 (Mu); A. S. Hitchcock 20206 (N). Province undetermined: Schimpff 330 (E--1091675). PERU: Lima: N. J. Andersson s.n. [Lima, 17 Mars 1852] (N, S, S). BRAZIL: Bahia: Martius s.n. [sylvia catingas ad fluv. Itapicurá] (Mu--27). Ceará: Drouet 2561 (I, Lb--24426, Mi, N, S, Sp--38349,

Sp, W--1692594). Goiás: Hatschbach 34570 (Ld); Macedo 2612 (N, S), 3280 (N). Maranhão: Ozimo de Carvalho 6 [Herb. Inst. Bot. S. Paulo 3462] (N, Sp--3462). Mato Grosso: Kuntze s.n. [Mattogrosso, VII.92] (N, N, W--701326). Minas Gerais: Heringer 378 [Herb. Inst. Bot. S. Paulo 44564; Herb. Est. Exp. Café 378] (N, Sp--44564). Pará: Archer 8266 (Be--12100, N); Monteiro da Costa 43 (N); Sampaio s.n. [Herb. Mus. Nac. Rio Jan. 19923] (N); Sieber s.n. [Pará; comm. Hoffmannsegg 1830] (Br, F--photo, N--photo, Si--photo, Z--photo); Spruce 1016 (Mu--42). Paraná: Dusén 14170 (N, S, W--1481651); Hatschbach 17032 (Ft), 22166 (Mi); Hatschbach, Lindeman, & Haas 13318 (N); Lindeman & Haas 1786 (N); Stellfeld 1253 [Herb. Mus. Paran. 2364] (N). Rio de Janeiro: Cabral 35 [Herb. Cent. Pesq. Florest. 5191] (Fc). Rio Grande do Sul: Herb. Martius s.n. (N--photo); Leite 660 (N); Rambo 38012 (N), 49694 (N); Reitz C.359 (N). Roraima: G. H. H. Tate 130 (N). São Paulo: J. T. Lima s.n. [Herb. Jard. Bot. Rio Jan. 48998] (N); M. A. Pereira 926 (N). State undetermined: Herb. Imp. Vien. 183 [Brazil] (C); Luederwaldt s.n. [Herb. Inst. Bot. S. Paulo 20080] (N, Sp). BOLIVIA: Cochabamba: R. F. Steinbach 413 (N, N, W--2533365, Ws). El Beni: H. H. Rusby 916 (C, Pa, Pr, Ws). La Paz: O. E. White 905 (Mi, N, Pa, W--1232269). Pando: Prance, Forero, Wrigley, Ramps, & Farias 6597 (Az). Santa Cruz: Herzog 1429 (Mu). PARAGUAY: Hassler 960 (N, N), 7367 (Ca--944342, Mi, N, S), 7397 (Ca--944341, N, S); Kuntze s.n. [Concepcion, September 1892] (N), s.n. [Concepcion de Paraguay] (N); Malme 902 (N, S, S); T. Rojas 1874 [Herb. Osten 13566] (N, Ug), 13803 (N, N); Schinini 6727 (Ld). URUGUAY: Castellanos s.n. [Herb. Inst. Miguel Lillo 15761] (N); Herb. Herter 10052 (N), 95310 (N); Herter 747 [Herb. Herter 82833] (Mu); Rosengurt B.1959 (N). ARGENTINA: Buenos Aires: N. J. Andersson s.n. [Buenos Ayres, 1852] (N, S); Cammerson s.n. [Buenos Ayres et Montevideo] (N). Chaco: Jørgensen 2471 (E--831781), s.n. Herb. Mus. Argent. Cienc. Nat. 23944] (N); T. Meyer 8790 (N, S); A. G. Schulz 134 [Herb. Mus. Argent. Cienc. Nat. 6471] (N), 863 (N), 1500 (N), 1501 (N). Corrientes: Ibarrola s.n. [12.I.1945] (N, N); Krapovickas & al. 27303 (Ld); Pedersen 1153 (N, W--2283036), 1906 (N, S, W--2283115); Rodrigo 952 (N); Ruiz Huidobro 2037 (N, N), 3879 (N), 3888 (N), s.n. [Herb. Inst. Miguel Lillo 2184] (N, N); Schinini, Ferraro, González, & Tressens 11124 (Ld). Entre Ríos: T. Meyer 10058 (N); Scala 2003 (N, N, S, Ug). Formosa: Eyerdam & Beetle 22993 (Ba, Ca--652424); I. Morel 194 (N, S), 690 (N, Ur), 1120 (N), 1314 (N), 1491 (N), 1636 (N), 3867 (N, N); Reales 480 (N). Misiones: Ekman 2015 (N, S); Rodríguez 616 [Herb. Inst. Miguel Lillo 32241] (N), s.n. [Herb. Mus. Argent. Cienc. Nat. 23771] (N); G. J. Schwarz 559 (N, N). Salta: Rocha 91 (N, N). Santa Fé: Alvarez 909 (N); Hubrich s.n. [Rosario de Sa. Fé] (Mu).
[to be continued]